

Examiner Interview Summary

Applicants thank the Examiner for the courtesies rendered during a telephone interview on September 24, 2001. Examiner Sanjiv Shah, inventor James H. Wolfston, and applicants' representative Michael O. Scheinberg were on the telephone for the interview. The Scharmer reference was discussed in relationship to claim 1. Applicants agreed to amend claim 1 to more clearly distinguish over the prior art.

Applicants also thank the Examiner for courtesies rendered during an Examiner interview of October 3, 2001. Examiner Sanjiv Shah, inventors James H. Wolfston and Michael Hitchcock, and applicants' representative Michael O. Scheinberg were on the telephone for the interview. An amended claim 1 and a newly presented claim were discussed. Amended claim 1 appeared to distinguish over the art of record. The newly presented claim was determined to be outside of the scope of the original search and was not substantively considered.

Information Disclosure Statement

The Information Disclosure Statement submitted on February 13, 2001 fails to comply with 37 CFR 1.98(a)(1), which requires a list of all patents, publications, or other information submitted for consideration by the Office, and fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each publication cited.

Applicants submit a description of a previous product in the form of a Declaration. The information is being submitted in accordance with MPEP 2004, paragraph 11 which states: "It may be desirable to submit information about prior uses and sales even if it appears that they may have been experimental, not involve the specifically claimed invention, or not encompass a completed invention."

As stated in the Declaration, the ApplyWeb I program stored applicant information in a flat text file and did not store any applicant information in a relational database.

Oath or Declaration

Applicants submit a newly executed from Andr  e Hertz.

Claim Rejections Under 35 U.S.C. 103

Claims 1-55 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,640,577 to Scharmer. Application responds as follows.

To better explain the differences between Scharmer and the claimed invention, applicants will first describe the system taught by Scharmer, the system taught by applicant, and some of the differences between the two systems. Applicants will then point to specific

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claim language that differentiates over Scharmer.

Brief Description of Scharmer

Scharmer teaches a system for obtaining information from a mainframe database and inserting it onto an electronic form, without an operator having to copy the information onto a piece of paper and then manually type it into the form. "Many users of data processing systems are often required to fill out or send forms or letters during or after one or more data processing transactions." Col. 1, lines 13-15. "In the prior art, such forms are typically filled out manually and placed in a file folder." Col. 1, lines 26-27. "[T]he present invention provides the user of a data processing system with forms or other documents which are automatically at least partially completed or filled in with data presented on an operator's data terminal screen." Col. 1, line 66 to col. 2, line 2. Information that is not available from the databases can be typed in by an operator.

Scharmer also teaches that the form itself can be saved so that rather than having to access the mainframe data again to view the information again, an operator can access a saved form. "In the prior art, such forms are typically filled out manually and placed in a file folder. Little information is available on-line on the data processing system." Col. 1, lines 27-29. "In another prior art system, although a form can be partially completed using data displayed on a display terminal screen, the form cannot be saved and must be immediately printed or viewed." Col. 1 lines 35-38.

In Scharmer's system, data is obtained from a database on a mainframe computer and displayed on a display terminal in the form of a database report. Some of the displayed data is saved in memory at the display terminal on which it is displayed, and is then inserted onto a form. Report data to be saved is identified by its coordinates on the display screen, which coordinates had to have been previously programmed into the saving function. An operator can also enter data into a form before the form is saved, but the information typed in by the operator, although saved as part of the form, is not saved in a database independent of the form. Consequently, the data is not available from such a database for use on subsequent forms. None of the data manually entered by the operator on one form can be used to automatically fill in subsequent forms. Scharmer teaches a one way flow of data from the database into forms, and nothing the user does can add to or change the data in the database that is the source of information for completing subsequent forms.

Scharmer's forms are text files or files of texts and graphics. When a form is saved, information entered by the operator is apparently stored as part of the text of the form, and not in a database. Col. 4, lines 35-46. When a completed form is stored, there is no difference between the labels, instructions, and the data itself. The data entered into a form is not stored in a database from which it can be retrieved using a field identifier and inserted into a new form. Because the data is not associated with a variable name or a field identifier, the data values cannot be readily extracted and verified by comparison with acceptable values.

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Because Scharmer captures the database report information from the display screen, the program invoked by his "data processing function selector" or "SmartKeys" must include the location on the display screen of the information that he wants to retrieve. Col. 5, lines 20-60. Because the data is inserted into his forms as text and not database fields, he must also know the coordinates on the screen at which to insert the text. Any change in the format of the database report or of the form requires reprogramming the smart keys with the new location of the data. Thus, neither the format of the data base reports nor the format of the forms can be changed without writing new code.

Differences Between Scharmer and the Claimed Invention

The system described by Scharmer is a rigid "work-around" to overcome the inflexibility of mainframe databases and manual completion of forms. Applicants' system is a flexible forms engine that can be readily extended to handle new data fields without reprogramming the database or recreating existing forms.

Amended claim 1 differentiates over Scharmer by explicitly reciting that applicant data entered on a first application is stored in a database and can then be automatically inserted from the database into a second application.

Amended claim 1 also provides for "new form data fields corresponding to applicant information not previously requested to be added to the application form." Thus, a new form can request new information and information need only be entered once by the user. The information entered in these new fields is automatically stored in the database and available for inserting into subsequent forms "without requiring alterations of existing application forms or of programs that access the database, whereby customized applications to different institutions share data through common, extensible data storage."

As described above, Scharmer does not store user information in a database and cannot make newly entered information available for use on subsequent forms. Applicants can create new forms and can add new data to the database without having to reprogram existing forms. Because Scharmer's forms are merely text (or graphics) with blanks in them, and information is identified only by its coordinates on the display screen, any change to the location of the data on the database report or the form necessitates a change to the program associated with the smart key.

Amended independent claims 21 and 45 similarly recite automatically storing in a database new user information not previously requested without requiring alterations of existing forms or alterations of programs that access the database.

Because independent claims 1, 21, and 45 differentiate over Scharmer as described above, applicants submit that their corresponding dependent claims also allowable. Many of the dependent claims limitations further differentiate over Scharmer as described below.

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Claim 2 states that the form can be modified by modifying the application description file without modifying the program that creates the application. Scharmer requires rewriting the smart key programs if the form is changed to change the location on the terminal display screen of the displayed information.

Claim 3 recites that "posting applicant information entered into the first form data fields of the first application includes verifying that pre-specified application information is present and meets pre-specified criteria." Scharmer does not describe verifying any information. Scharmer merely saves as part of the text file whatever information is entered and displayed on the video display terminal.

Regarding claims 4, 5, 15, 22, 29, 48, 54, and 55, Scharmer does not describe any data validation. Scharmer does not describe posting a single page including verifying that some specific information is present and meets prespecified criteria and posting a completed application including verifying that the complete application meets criteria specified by the corresponding institution as described in claim 4.

Applicants' claimed invention includes forms for multiple institutions. Applicant as a third party server customizes forms for each institution including "branding" the forms so that users can readily identify to which institution the application is addressed. Scharmer describes forms being completed by in-house operators, not by the public. Scharmer does not require or describe any "branding." The identifying name and number of a form used to call up the form is not a "brand," that is, a mark signifying to the public the institution sponsoring the application.

Scharmer does not teach multiple page forms, with individual pages being separately posted. The use of multiple page forms allows data verification to be accomplished during the forms completion process, rather than waiting until the complete form has been addressed by the user, with the possibility that the user will be so overwhelmed with unaccepted fields that he may stop the forms completion process.

Claim 29 recites "the content of at least one of the multiple pages depends upon previously supplied user information." Claim 44 similarly recites that the content of a page is dependent upon information previously supplied by the user. Scharmer uses stored text file forms and does not describe varying forms based on information previously submitted by the operator.

Regarding claims 6, 14, and 27, Scharmer does not describe transmitting the data entered by the operator to two different institutions in requested formats. The system of Scharmer appears to be operated by the single institution that the system services. Claim 14 recites storing applicant information and inserting it from data storage information. As described above with respect to claim 1, information entered by the operator is not stored in a database for retrieval into subsequent forms.

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Regarding claims 7, 8, and 28, applicants submit that Scharmer does not teach transmitting the applicant information from the completed form to any institution. Scharmer does not teach any selectivity in making application information available.

Regarding claim 10, in col. 1, lines 12-25, Scharmer explains that his invention is useful in filling out forms regarding credit card security. Scharmer uses MasterCard and Visa in his examples, but does not describe any payment made in connection with processing a form.

Regarding claims 9, 11, 12, 16, 25, 26, and 47, claim 9 recites that storing applicant information is performed by a third party application server. Using a third party application server allows the applicants to apply to multiple institutions through a single server, thereby allowing data entered once to be inserted into applications to different institutions. Scharmer does not disclose a third party application server. Claim 11 recites that storing the information includes parsing the information into elements, the data elements being separately stored and identified, thereby allowing the elements to be separately retrieved and rearranged in subsequent applications. Scharmer does not teach parsing applicant information. Scharmer pulls information from a database report, but does not describe parsing the applicant data itself.

Claim 12 recites inserting information representing combined elements into a single field. Scharmer does not teach this. Claim 16 recites that the content of a page depends upon information posted in a previous page. Scharmer does not teach this. As described above, Scharmer does not teach multiple page forms. Claim 26 states that user attributes have properties that specify information about the attribute. Scharmer uses only text data and does not describe the use of properties that describe information about the data. Scharmer does not teach the use of a third party server servicing multiple institutions. Claim 47 states that the data storage is extensible without reprogramming the program that generates the customized applications. As described above, any change to the database report by Scharmer requires reprogramming the smart keys that access the data from the display screen position.

Claim 13 recites that information is shared across forms, regardless of the label used for information on the form. Scharmer does not teach sharing information across forms. Scharmer teaches only using information from a database and cannot share information.

Regarding claims 17, 20, 21, 52, and 53, Scharmer teaches the temporary storage of data in the video display terminal memory between viewing a database report and retrieving a form. This temporary storage is not comparable to a relational database or XML. Moreover, XML includes capabilities of describing information that are not described in Scharmer.

Regarding claim 18-20 and 49-51, claim 18 recites that the data storage stores



metadata describing the data. R, C, L is the row, column and length at which the information is displayed and Scharmer does not describe that this information is stored in a database with the data. Regarding claim 19, there is no mention of validation rules in Scharmer and, regarding claim 20, there is no indication of metadata that specifies the sharing or accessibility of data. Similarly, the limitations of claims 49-51 are not taught.

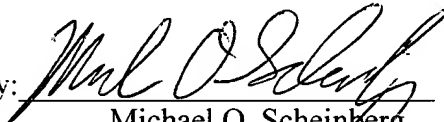
Regarding claim 46, the Examiner states that Scharmer teaches the method of overwriting with new values in col. 7, lines 53-63. Claim 46 recites new values being stored in the data storage in place of the existing values. As described above, Scharmer does not store any information entered by the operator into a database; there is a one way flow of information from a database to the display screen, where it is captured and placed onto a form.

For the reasons stated above, applicants request reconsideration of the rejections and allowance of the application.

Respectfully submitted,

Date: 12 Oct 01

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CLAIMS

1. (Twice Amended) A method of creating and processing over a computer network forms representing applications ~~for admission to~~ different higher education institutions,
5 comprising:

creating in response to a request from an applicant for an application to a first institution a first application form customized in accordance with the preferences of the first institution, the first application form including first form data
10 fields for entering applicant information;

providing to the applicant over a computer network the first application form;

entering the applicant information in the first form data fields;

posting the ~~first applicant information entered into the first form data fields~~
15 of the first application form to a server;

storing the posted applicant information in a ~~data storage~~ database having a database field structure defined by multiple database fields, the database including multiple records, each record capable of storing information corresponding to each of the database fields;

20 creating in response to a request from the applicant for an application to a second institution a second application form customized in accordance with the preferences of the second institution, the second application form including second form data fields for entering applicant information, at least one of the second form data fields corresponding to applicant information not entered into the first form data
25 fields;

automatically inserting into some of the second form data fields of the
~~second application~~ applicant information from the ~~data storage~~ database;

providing to the applicant over a computer network the second application form;

30 entering applicant information into the second form data fields ~~for entering applicant data into which information was not inserted from the data storage or into which the data inserted from the data storage is to be changed; and~~

posting the applicant information entered into the second form data fields
~~second application form to the server; and~~

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automatically storing the applicant information entered into the second form data fields into the database by adding new records to the database, the automatic storing of the applicant information not altering the database field structure, thereby allowing new form data fields corresponding to applicant information not previously requested to be added to an application form without requiring alterations of existing application forms or of programs that access the database, whereby customized applications to different institutions share data through common, extensible data storage.

2. (Amended) The method of claim 1 in which creating a first application form customized in accordance with the preferences of the first institution includes generating a first application in accordance with stored application description information and in which ~~the a modified~~ first application can be generated ~~modified~~ by modifying the application description information without rewriting the computer program that creates the first application.

3. (Amended) The method of claim 1 in which posting applicant information entered into the first form data fields of the first application includes verifying that pre-specified application information is present and meets pre-specified criteria.

4. (Amended) The method of claim 1 in which posting applicant information entered into the first form data fields of the first application and posting applicant information entered into the second form data fields of the second application each includes the steps of posting data from a single page of the application and of posting data from the completed application, and in which posting a single page includes verifying that some specific information is present and meets pre-specified criteria and in which posting data from the ~~complete-completed~~ application includes verifying that the information meets criteria specified by the corresponding institution.

5. (Amended) The method of claim 1 in which creating an application ~~to~~ form customized in accordance with the preferences of a first institution includes creating an application form identified with the brand of the first institution and in

which creating an application form customized in accordance with the preferences of to a second institution a second application includes creating an application form identified with the brand of the second institution.

5 6. (Amended) The method of claim 1 further comprising transmitting the applicant information to the first institution in a first format specified by the first institution and transmitting the applicant information to the second institution in a second format specified by the second institution, the second format being different from the first format.

10 7. (Amended) The method of claim 6 further comprising making applicant information from multiple applications to the first institution from different applicants available on line to the first institution for analysis after transmitting the applicant information to the first institution.

15 8. (Amended) The method of claim 7 in which making applicant information from multiple applications available to the first institution includes making application information selectively available to various personnel at the institution.

20 9. (Amended) The method of claim 1 in which automatically storing the applicant information is performed by a third party application servicer.

25 10. (Amended) The method of claim 9 in which posting the first ~~application~~ applicant information and posting the second application-applicant information includes paying application fees for the first and second applications and in which the third party servicer processes the application fee.

30 11. (Amended) The method of claim 1 in which storing the posted applicant information in a database having a database field structure defined by multiple database fields includes parsing the applicant information within a into data elements, the data elements being separately stored and identified, thereby allowing the data elements to be separately retrieved and rearranged in subsequent

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applications.

12. (Amended) The method of claim 11 in which automatically inserting applicant information from the data storage database includes automatically inserting applicant information representing combined elements into a single field~~one of the second form data fields.~~

13. (Twice Amended) The method of claim 1 in which:
the first form data fields for entering applicant information include first form data field labels;

at least some of the second form data fields in the second application use include second form data field labels different from the first form data field labels for form data fields corresponding to the same data~~those in the corresponding fields in the first application;~~

~~the inserting of applicant information being performed automatically; and~~
storing the posted applicant information and automatically inserting into some of the second form data fields applicant information from the data storage database ~~are s-independent of the labels used in the first application form and the second application form,~~

thereby allowing each institution to customize the appearance of its corresponding application, while still permitting information to be shared across applications.

14. (Amended) The method of claim 1 in which the first form data fields and the second form data fields for entering applicant information are formatted and in which at least some of the second form data fields in the second application are formatted differently from those in the corresponding first form data fields in the first application~~and in which storing the posted applicant information and automatically inserting applicant information from the data storage database is independent of the data field format used in the application,~~ thereby allowing each institution to customize the appearance of its corresponding application, while still permitting information to be shared across applications.

15. (Amended) The method of claim 1 in which providing the first

application form comprises providing multiple form pages and in which posting the first applicant information ~~application~~ to a server includes posting multiple form pages to the server.

5 16. (Amended) The method of claim 15 in which the content of a page of the ~~provided first~~ application depends upon applicant information posted in a previous page of the first application.

10 17. (Amended) The method of claim 1 in which the ~~data storage~~ database includes a relational database or XML ~~files~~ data.

 18. (Amended) The method of claim 1 in which the ~~data storage~~ database ~~includes~~ stores metadata describing the data.

15 19. (Amended) The method of claim 18 in which the metadata includes validation rules for the data.

 20. (Amended) The method of claim 18 in which the metadata specifies the sharing between applications or the accessibility of the data.

20 21. (Twice Aamended) A system for creating and processing customized forms for unrelated institutions using a common third party data storage over a computer network, the system including:

 a server computer operated by the third party and in data communication
25 over a data network with a client computer for requesting a form and for entering information onto the form;

 first data storage in communication with the server computer and including form description information specifying the content and appearance of each customized form;

30 second data storage in communication with the server computer and including user information posted from the client computer, the second data storage including a database having a database field structure defined by multiple database fields, the database including multiple records, each record capable of storing information corresponding to each of the database fields; and



a forms engine program operating on the server computer for generating a form from the form description information in response to a request for the form transmitted from the client computer over the computer network, the form including fields for the user to enter user information, the forms engine program automatically populating the fields for user information with user information available from the second data storage, accepting user information entered on the form by the user, and ~~and~~ storing the newly entered information in the second data storage for ~~use on~~ automatically populating subsequent forms, the user information entered by the user including at least some information not entered on a previous form by the user, the forms engine automatically storing the entered information into the database by adding new records to the database, the automatic storing of the user information not altering the database field structure, thereby allowing new user information not previously requested to be added to a form without requiring alterations of existing forms or alterations of programs that access the database.

22. (~~Twice A~~amended) The system of claim 21 in which the forms engine program generating a form includes ~~generates ing~~ a form ~~including that includes~~ branding information identifying the particular institution to which the form is directed.

23. (~~Twice a~~Amended) The system of claim 21 in which the forms engine program generates customized forms that include labels for data entry fields and in which at least some of the labels are different for the same user information on different ones of the customized forms.

24. (~~Twice A~~amended) The system of claim 21 in which the same user information is requested using ~~different~~ differently styled menus on different ones of the customized forms.

25. (~~Twice A~~amended) The system of claim 21 in which at least some of the user information is parsed into smaller elements before storage, the smaller elements being stored in the database and being individually retrievable for insertion into subsequent forms.

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26. (~~Twice Amended~~) The system of claim 21 in which the user information stored in the second database ~~about the user~~ is in the form of user attributes and in which at least some of the user attributes have properties that specify information about the attribute.

27. (~~Twice Amended~~) The system of claim 21 further comprising means for transmitting in a format specified by the institution information user data from a completed form to the institution associated with the form.

28. (~~Twice Amended~~) The system of claim 21 further comprising means for verifying information in a form, the verification means including verification criteria ~~means for verifying information common to all forms and~~ verification criteria ~~means for verifying information for a specific institutions.~~

29. (~~Amended~~) The system of claim 21 in which the forms engine generates a form comprising multiple pages and in which the content of at least one of the multiple pages depends upon previously supplied user information.

30. (~~Amended~~) The system of claim 21 in which the first or second data storage comprises one or more XML files stored on a computer readable medium.

31. (~~Amended~~) The system of claim 21 in which the first or second data storage comprises one or more relational database tables stored on a computer readable medium.

~~32. (Amended) A method of creating and processing forms associated with multiple form data recipients, comprising:~~

~~contacting a server over a computer network;~~

~~creating a form customized for one of the multiple form data recipients from stored form description information;~~

~~inserting available user information from a user data storage into the form;~~

~~transmitting the form with the available user information to a user for completion;~~

~~completing the form;~~

—receiving the completed form; and
—storing user information from the form in the user data storage.

5 —33. (Amended) The method of claim 32 in which completing the form includes completing multiple pages of the form with each page being transmitted to the server for verification in accordance with verification rules before completing a subsequent page.

10 —34. (Amended) The method of claim 33 in which receiving the completed form includes verifying the completed form in accordance with verification rules specific to the one of the multiple form data recipients.

15 —35. (Amended) The method of claim 32 in which the user data storage includes a relational database.

—36. (Amended) The method of claim 32 in which the user data storage includes a one or more XML files.


20 —37. (Amended) The method of claim 32 in which the user data storage includes information describing properties of the data.

—38. (Amended) The method of claim 37 in which the properties of the data include permissible values for the data.

25 —39. (Amended) The method of claim 37 in which the properties of the data specify the conditions under which the data is to be displayed.

30 —40. A forms processing apparatus, comprising: multiple forms for containing data, the forms being associated with different institutions and specifying a process, the process including a front-end process for presenting a page to a user and receiving and storing data from the user and a back-end processing specification for preparing the form data for receipt by the institution;

—a forms engine that integrates the form, the data, and processes regardless of the appearance of the form, the type or significance of the data, and the processing



that follows collection of the data.

5 ~~41. (Amended) The apparatus of claim 40 in which the forms engine resides on a server maintained by a third party forms servicer and each form is customized for an associated are specified in a relational database.~~

~~42. (Amended) The apparatus of claim 40 in which the content and processes of the forms are specified in XML files.~~

10 ~~43. (Amended) The apparatus of claim 40 in which the front end processing includes data validation.~~

15 ~~44. (Amended) The apparatus of claim 40 in which the front end processing includes creating a form including multiple pages, the content of each page dependent upon information previously supplied by the user.~~

45. (Amended) A method of providing customizable customized applications to institutions, the applications sharing a common data storage database, the method comprising:

20 providing at least two application information files, each describing a customized applications for an independent institution;

25 providing data storage a database for storing applicant information entered on an application and for providing applicant information for inserting the information into subsequent applications, the database having a database field structure defined by multiple database fields, the database including multiple records, each record capable of storing information corresponding to each of the database fields;

30 generating a customized application in response to a request over a computer network from an applicant, the application form and content being specified by one of the at least two application information files, the application including multiple form data fields for entering applicant information;

populating the form data fields of the customized application using applicant information from the data storage database;

transmitting the customized application over a computer network to a

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requesting applicant; and

5 completing form data fields of the application that were not populated with
applicant information from the ~~data storage~~ database, at least one of the form data
fields corresponding to applicant information not entered into the form data fields of
an application previously completed by the requesting applicant; and

10 automatically storing the applicant information entered into the form data
fields into the database by adding new records to the database, the automatic storing
of the applicant information not altering the database field structure, thereby
allowing new form data fields corresponding to applicant information not previously
15 requested to be added to an application form without requiring alterations of existing
application forms or of programs that access the database.

15 46. (~~Twice A~~amended) The method of claim 45 in which completing fields
of the application that were not populated from the ~~data storage including database~~
includes overwriting with new values fields that were populated from the data
storage, the new values being stored in the data storage in place of the existing
values.

20 47. (~~Twice A~~amended) The method of claim 45 in which providing a data
~~storage database~~ for storing information includes providing a ~~data storage database~~
that is extensible without reprogramming the program for generating the customized
application, thereby allowing an institution to readily request and store new
information not previously stored.

25 48. (~~Amended~~) The method of claim 45 in which generating a customized
application includes generating an application that includes the logotype of the
institution.

30 49. (~~Twice A~~amended) The method of claim 45 in which the ~~data storage~~
~~store database~~ stores metadata describing the data.

50. (~~Twice A~~amended) The method of claim 49 in which the metadata
describes permissible values for the data and further comprising comparing the
applicant data in the completed form data fields with the permissible values.

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51. (Twice Aamended) The method of claim 49 in which the meta data describes conditions under which questions on the customized application are displayed .

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52. (Twice Aamended) The method of claim 45 in which the ~~data storage~~ database includes a relational database.

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53. (Twice Aamended) The method of claim 45 in which the ~~data storage~~ database includes ~~one or more XML data~~ files.

54. (~~Amended~~) The method of claim 45 in which the customized application includes multiple pages.

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55. (~~Amended~~) The method of claim 54 in which the content of one of the multiple page depends the fields completed by an applicant on a previous one of the multiple pages.



ABSTRACT

A forms engine allows data sharing between customizable ~~on-line~~on-line forms, such as college admissions applications. ~~Before applying, an applicant opens an account with a third party application servicer.~~ After ~~the~~an applicant completes an application for ~~one institution~~, the data is saved in a data-base and automatically populates fields in subsequent application forms. ~~The form for each institution is created from a form description file.~~ Each form is branded for its institution and forms for different institutions differ in appearance and content so that the presence of the third party servicer is transparent to the applicant.

——The system is extensible without programming, allowing new applicant attributes to be readily incorporated into the system and allowing the content and appearance of the application to be readily changed by changing the description file. ~~The use of aliases for applicant attributes permits data to be readily shared between forms even though labeled and arranged differently on different forms.~~ Information stored about each attribute allows the specification of data validation rules and data sharing and grouping rules, as well as dependency rules that permit application page content to depend on ~~applicant's~~applicant's responses on a previous page.

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